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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/899,645	07/05/2001	Chun Ping Li	35718/235742 (5718-114)	7724

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EXAMINER

KALLIS, RUSSELL

ART UNIT	PAPER NUMBER
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1638

DATE MAILED: 05/05/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/899,645	Applicant(s) LI ET AL.	
	Examiner Russell Kallis	Art Unit 1638	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 February 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3,5-8,10-14,17,21,22 and 24-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3,5-8,10-14,17,21,22 and 24-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

Claims 1-3, 5-8, 10-14, 17, 21-22, and 24-30 are pending and examined.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Rejection of Claims 1-3 under 35 U.S.C. 102(b) as being anticipated by Walbot V and Gordon-Kamm W. is withdrawn in view of Applicant's amendments and arguments.

Rejection of Claims 1-2 under 35 U.S.C. 112, second paragraph, is withdrawn in view of Applicant's amendments.

Claim Rejections - 35 USC § 112

Claims 1-3, 5-8, 10-14, 17, 21-22, and 24-30 remain rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. This rejection is maintained for the reasons of record set forth in the Official action mailed 10/21/2003. Applicant's arguments filed 2/20/2004 have been fully considered but they are not persuasive. Applicant asserts that the claims recite the structural and functional features of the claimed isolated nucleotide sequences (response pages 12-13). The specification does not describe structural features common to or a representative number of the claimed genus of isolated polynucleotides that have 90% sequence identity to or comprise at least 200 contiguous nucleotides of SEQ ID NO: 1 encoding an acyl-CoA thioesterase.

Claims 1-3, 5-8, 10-14, 17, 21-22, and 24-30 remain rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. This rejection is maintained for the reasons of record set forth in the Official action mailed 10/21/2003. Applicant's arguments filed 2/20/2004 have been fully considered but they are not persuasive. Applicant asserts that based on the guidance in the specification one of ordinary skill in the art would be able to determine which nucleotide sequences are encompassed by the present invention and that the quantity of experimentation required to practice the invention amounts to two steps, identifying a nucleotide sequence that comprises at least 90% sequence identity to SEQ ID NO: 1 or has at least 200 contiguous nucleotides in common with SEQ ID NO: 1 and then assaying the protein encoded for acyl-CoA thioesterase activity (response pages 13-17). The specification has not taught how to make nucleotide sequences having the activity encompassed by the present invention. There is no guidance for determining which substitutions, additions, deletions or recombinations of SEQ ID NO: 1 would retrieve a sequence that has 90% sequence identity or retrieve a sequence having at least 200 contiguous nucleotides in common with SEQ ID NO: 1 and still have acyl-CoA thioesterase activity and thus the one of skill in the art would be required to practice trial and error experimentation to sort through a myriad of non-exemplified substitutions, additions, deletion or recombinations of sequences to discover a polynucleotide that encoded a protein having acyl CoA thioesterase activity.

Claims 3, 5-8, 10-14, 17, 21-22, 24-30 remain rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Dependent claims are included in all rejections.

Claim 3 is dependent upon itself.

In Claim 5, the claim recites “A method of decreasing beta-oxidation in a plant”, in line 1, and “wherein the level of oil or the level of at least one constituent of said oil is increased”, in line 20, is indefinite. It is not clear what or if there is a connection between the two parts of the claim. Applicant asserts that they have connected the method of decreasing beta oxidation in a plant with an increased oil constituent by amending the claim to recite that the expression construct comprises a promoter (response page 18). However, the claim does not recite that the promoter/construct expresses the thioesterase it merely recites that the promoter drives expression in a plant cell. It is unclear if there is any connection between the parts of the claim.

In Claim 5, the claim does not recite a regeneration step and therefore, the plant of line 1 is the same said plant recited at the end of the claim. Further, the method claim is incomplete because it does not recite an expression step, and therefore there is no indication that expression of an acyl-CoA thioesterase nucleotide sequence is in any way related or even necessary to either decrease beta-oxidation or increase oil or an oil constituent in the plant. Applicant asserts that they have a method that doesn't require regeneration because this method involves contacting a plant with viral nucleic acids, presumably transfecting the plant wherein there is no incorporation of the nucleic acids into the genome of the plant (response page 18). The claim recites transforming a plant cell. Applicant's viral method for plant transformation is not transformation but is properly called transduction since the nucleic acids are not incorporated into the cell's

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nucleus. Nonetheless, Applicant is invited to inspect page 5, lines 6-8 where regeneration is a required step for the 'preferred' methods of the invention.

Claims 10 and 11 are dependent upon canceled Claim 9.

In Claims 21 and 30, line 2, after "expression" insert --in--.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-3 are rejected under 35 U.S.C. 102(e) as being anticipated by Allen S. *et al.*

U.S. Patent 6,677,502 that claims priority to U.S. provisional 60/172,946 filed 12/21/1999 that discloses a polynucleotide sequence having 92.5% sequence identity to SEQ ID NO: 1 encoding an amino acid having 100% sequence identity to SEQ ID NO: 2 and that has acyl CoA thioesterase activity.

Allen teaches an isolated polynucleotide sequence (#109) having 92.5% sequence identity to SEQ ID NO: 1 encoding an amino acid (#110) having 100% sequence identity to SEQ ID NO: 2 that has acyl CoA thioesterase activity and expression cassettes comprising constitutive promoters (see columns 32-33 and 217-220 and attached sequence search report).

Thus the reference teaches all the limitations of Claims 1-3.

All Claims are rejected.

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Claims 5-8, 10-14, 17, 21-22, and 24-30 are deemed free of the prior art, given the failure of the prior art to teach or reasonably suggest a method of reducing beta-oxidation in a transformed plant using an isolated polynucleotide of SEQ ID NO: 1.


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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Russell Kallis whose telephone number is (571) 272-0798. The examiner can normally be reached on M-F 8:30-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amy Nelson can be reached on (571) 272-0804. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Russell Kallis Ph.D.
April 29, 2004


ASHWIN D. MEHTA, PH.D
PATENT EXAMINER